

**CLAIMS:**

What is claimed is:

1. A method for managing a user key used to sign a  
2 message for a data processing system, said method  
3 comprising:

4 assigning a user key to a user and storing the user  
5 key in a data processing system for encrypting messages;

6 encrypting the messages with the user key;

7 storing an associated key in the data processing  
8 system and encrypting the user key with the associated key  
9 to obtain an encrypted user key;

10 communicating encrypted messages in conjunction with  
11 the encrypted user key to validate an association of the  
12 user with the encrypted messages; and

13 thereafter, preventing validation of the association  
14 of the user with messages by revoking the associated key.

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2. The method according to Claim 1, further comprising:

decrypting the user key with the associated key; and

decrypting the messages with the user key.

3. The method according to Claim 1, wherein the data processing system further comprises a client system having a client memory device coupled to a server system having an encryption chip and a server memory device and wherein:

storing the user key in a data processing system for encrypting messages further comprises storing the user key in the client memory device;

storing the associated key in the data processing system further comprises storing the associated key in the server memory device; and

preventing validation further comprises preventing the validation of the messages associated with the user by eliminating the associated key from the server memory device.

4. The method according to Claim 3, wherein encrypting the messages further comprises:

sending the messages to be encrypted from the client system to the server system;

encrypting the messages using the encryption chip of the server system; and

sending the encrypted messages from the server system

8 to the client system.

1 5. The method according to Claim 4, further comprising:

2 erasing from the server system all data relating to  
3 the encrypted messages after the encrypted messages are  
4 sent from the server system to the client system.

1 6. The method according to Claim 1, further comprising:

2 encrypting the associated key by using an encryption  
3 chip key which is stored on an encryption chip of the data  
4 processing system.

1 7. The method according to Claim 6, further comprising:

2 encrypting the associated key with the encryption  
3 chip key; and

4 communicating an encrypted associated key to validate  
5 the association of the user with the encrypted messages.

1 8. The method according to Claim 7, further comprising:

2 decrypting the associated key with the encryption  
3 chip key.

1        9. A system for managing a user key used to sign a  
2        message for a data processing system, said system  
3        comprising:

means for assigning a user key to a user and storing the user key in a data processing system for encrypting messages;

means for encrypting the messages with the user key;

means for storing an associated key in the data processing system and encrypting the user key with the associated key to obtain an encrypted user key;

means for communicating encrypted messages in conjunction with the encrypted user key to validate an association of the user with the encrypted messages; and

means for thereafter preventing validation of the association of the user with messages by revoking the associated key.

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1 10. The system according to Claim 9, further comprising:

2 means for decrypting the user key with the associated  
3 key; and

4 means for decrypting the messages with the user key.

1 11. The system according to Claim 9, wherein the data  
2 processing system further comprises a client system having  
3 a client memory device coupled to a server system having  
4 an encryption chip and a server memory device and wherein:

5 said means for storing the user key in a data  
6 processing system for encrypting messages further  
7 comprises means for storing the user key in the client  
8 memory device;

9 said means for storing the associated key in the data  
10 processing system further comprises means for storing the  
11 associated key in the server memory device; and

12 said means for preventing validation further  
13 comprises means for preventing the validation of the  
14 messages associated with the user by eliminating the  
15 associated key from the server memory device.

1 12. The system according to Claim 11, wherein said means  
2 for encrypting the messages further comprises:

3 means for sending the messages to be encrypted from  
4 the client system to the server system;

5 means for encrypting the messages using the  
6 encryption chip of the server system; and

7           means for sending the encrypted messages from the  
8       server system to the client system.

1       13. The system according to Claim 12, further comprising:

2           means for erasing from the server system all data  
3       relating to the encrypted messages after the encrypted  
4       messages are sent from the server system to the client  
5       system.

1       14. The system according to Claim 9, further comprising:

2           means for encrypting the associated key by using an  
3       encryption chip key which is stored on an encryption chip  
4       of the data processing system.

1       15. The system according to Claim 14, further comprising:

2           means for encrypting the associated key with the  
3       encryption chip key; and

4           means for communicating an encrypted associated key  
5       to validate the association of the user with the encrypted  
6       messages.

1       16. The system according to Claim 15, further comprising:

2           means for decrypting the associated key with the  
3       encryption chip key.

1       17. A program product for managing a user key used to  
2       sign a message for a data processing system, said program  
3       product comprising:

4 a control program including:

5 instruction means for assigning a user key to a user  
6 and storing the user key in a data processing system for  
7 encrypting messages;

8 instruction means for encrypting the messages with  
9 the user key;

10 instruction means for storing an associated key in  
11 the data processing system and encrypting the user key  
12 with the associated key to obtain an encrypted user key;

13 instruction means for communicating encrypted  
14 messages in conjunction with the encrypted user key to  
15 validate an association of the user with the encrypted  
16 messages;

17 instruction means for thereafter preventing  
18 validation of the association of the user with messages by  
19 revoking the associated key; and

20 computer usable media bearing said control program.

1           18. The program product according to Claim 17, further  
2 comprising:

3 instruction means for decrypting the user key with  
4 the associated key; and

5 instruction means for decrypting the messages with  
6 the user key.

1 19. The program product according to Claim 17, wherein  
2 the data processing system further comprises a client  
3 system having a client memory device coupled to a server  
4 system having an encryption chip and a server memory  
5 device and wherein:

6 said instruction means for storing the user key in a  
7 data processing system for encrypting messages further  
8 comprises instruction means for storing the user key in  
9 the client memory device;

10 said instruction means for storing the associated key  
11 in the data processing system further comprises  
12 instruction means for storing the associated key in the  
13 server memory device; and

14                   said instruction means for preventing validation  
15                   further comprises instruction means for preventing the  
16                   validation of the messages associated with the user by  
17                   eliminating the associated key from the server memory  
18                   device.

1       20. The program product according to Claim 19, wherein  
2       said instruction means for encrypting the messages further  
3       comprises:

4 instruction means for sending the messages to be  
5 encrypted from the client system to the server system;

6 instruction means for encrypting the messages using  
7 the encryption chip of the server system; and

8 instruction means for sending the encrypted messages  
9 from the server system to the client system.

1 21. The program product according to Claim 20, further  
2 comprising:

3 instruction means for erasing from the server system  
4 all data relating to the encrypted messages after the  
5 encrypted messages are sent from the server system to the  
6 client system.

1 22. The program product according to Claim 17, further  
2 comprising:

3 instruction means for encrypting the associated key  
4 by using an encryption chip key which is stored on an  
5 encryption chip of the data processing system.

1 23. The program product according to Claim 22, further  
2 comprising:

3 instruction means for encrypting the associated key  
4 with the encryption chip key; and

5 instruction means for communicating an encrypted  
6 associated key to validate the association of the user  
7 with the encrypted messages.

1        24. The program product according to Claim 23, further  
2        comprising:

3                instruction means for decrypting the associated key  
4        with the encryption chip key.

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